



AMC Pilot Retention: A Delphi Study

GRADUATE RESEARCH PAPER

June 2016

Ryan K. Thornton, Major, USAF

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Abstract

This research studied AMC pilot retention in the forthcoming decade and what influences millennial pilots to stay or leave active duty. Furthermore, this study asked if a dual track (fly only career path) would help with retention in AMC. A Delphi Study consisting of 16 AMC aviation experts was utilized to answer the research questions. The expert panel was comprised of officer ranks spanning from Major to Colonel and included instructor pilots, flying squadron commanders, and operations group commanders.

This analysis determined that AMC will have a difficult time with pilot retention in the next ten years. Additionally, the high operations tempo coupled with outside employment opportunities are the main causal factors influencing pilots to leave active duty. While career autonomy is proven to positively affect retention, a dual track option is not believed to have a significant impact on AMC pilot retention. Finally, the panel concluded that the AF was not likely to employ any of the panel's responses on how to bolster AMC retention.

To my wife and family, your support throughout this academic year allowed the successful completion of this research.

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Major Ryan K. Thornton

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AMC Pilot Retention: A Delphi Study

I. Introduction

“You’re going to find that military pilots will be a focal point of this recruiting. Every time the airlines have recruited heavily in the past, we’ve lost more people. They’ve been deploying, and deploying, and deploying. After a while, your family gets a little tired of that.”

--Chief of Staff of the Air Force Mark A. Welsh, Apr 15

General Issue

A 2015 RAND (Research And Development) Corporation study researched the current major airline pilot-manning and in conclusion, forecasted an imminent airline pilot shortage. This prediction recently was proven factual by a Wall Street Journal article citing Republic Airways stock, which was cut in half by a pilot shortage. Republic’s pilot deficiency caused the company to cut flying in the second quarter by 4% (Nicas, 2015). The decline in Republic’s pilots was contributed to a recent Federal Aviation Administration (FAA) change in airline pilot requirements that increased commercial pilot qualifications by 1,250 flight hours. Furthermore, the FAA extended the commercial airline retirement age from 60 to 65 and extended crew rest times for pilots (Kennedy, 2012). With the new additions, the demand for pilots with high experience levels will be needed, and the primary feeder will be military aviators (see Figure 1).

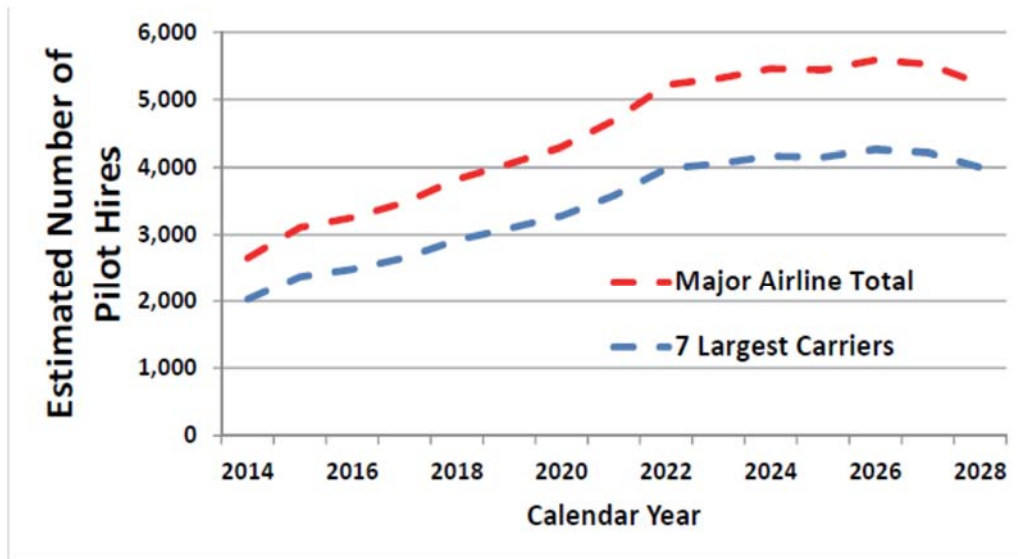


Figure 1. Future Estimated Major Airline Pilot Hiring (Sweeney, 2015)

Cause for concern by military leaders relating to the FAA's amendments are correct because the "Air Force (AF) has traditionally been a significant source of pilots for the major airline industries" (Sweeney, 2015). The military is the pipeline for commercial pilots because of cost. The commercial sector has not historically born the burden of training and maturation of pilots. As of 2009, the cost to send a military officer to Undergraduate Pilot Training (UPT) was approximately \$750,000, and is now closer to \$1,000,000 (Thomas, 2009). These FAA adjustments teamed with pilot training cost and AF retention rates (See Figure 2) paint a foreboding picture to AF leaders.

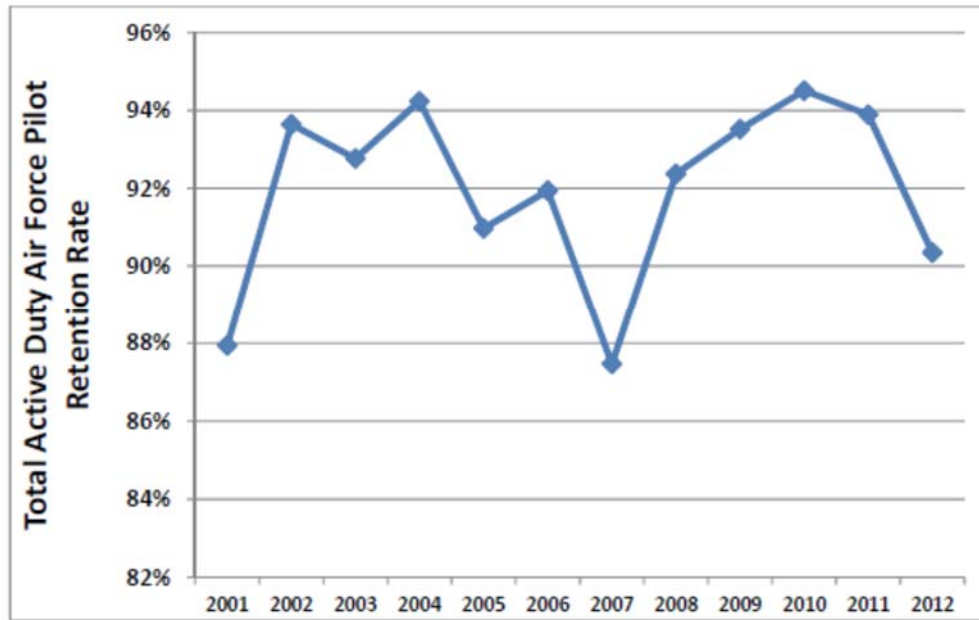


Figure 2: Annual Active Duty Air Force Pilot Retention Rates, 2001-2012

(Sweeney, 2015)

Future projections of Air Force pilot manning show a scarcity of fighter pilots and a surplus of mobility pilots. (See Figure 3). However, the excess of mobility aviators may not be sufficient as the Air Force is required to compete with civilian companies for the services of its officers. The decline of the pilot inventory was demonstrated in Fiscal Year 2014 Air Force Initial Aviation Retention Pay (ARP) take rate, the percentage of pilots finishing their AF contract that sign a new agreement to stay in the AF. In fact, FY14 was nine percent lower than the preceding year. The Initial ARP, or more commonly called the pilot bonus, acceptance rate was the lowest in the last twelve fiscal years. Take rates are an accurate measure of AF pilot inventory health. The take rate from Fiscal Year (FY) 1997 to FY02 had such a profound effect that the AF Chief of Staff declared pilot retention as the topmost AF dilemma (Stanley, 2012). (See Table 1). To combat this mass pilot exodus, the AF focused on four areas: bolstering personnel

programs, decrease operations tempo, enhance quality of life, and expand care for deployed Airmen's families (Grier, 1998).

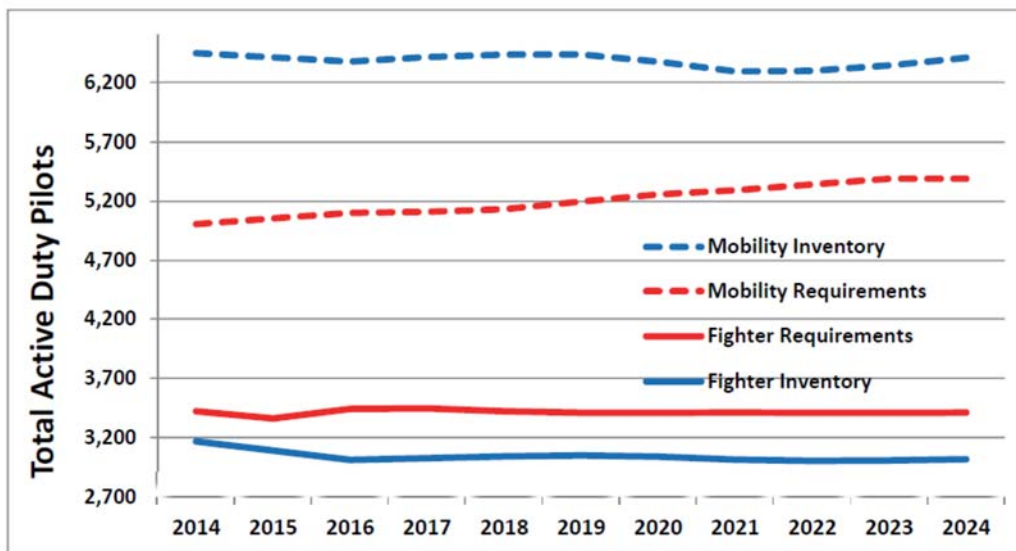


Figure 3: Estimated Future Active Duty Air Force Mobility and Fighter Pilot

Annual Manpower Balance (Sweeney, 2015)

Table 1: Historical Initial Pilot (ARP) Summary (AFPC, 2014)

	FY92	FY93	FY94	FY95	FY96	FY97	FY98	FY99	FY00	FY01	FY02
ARP Rate	69%	79% ¹	81%	76%	58%	35% ²	28% ²	42% ³	32% ³	30% ³	47% ³
	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13
	65% ³	70% ³	65%	66%	67%	68%	65% ²	76% ⁴	70% ⁵	67% ⁶	68% ⁷
	FY14										
	53% ⁸										

Notes:

1. When researching past ARP take rates, we found conflicting numbers in old reports. The data has been re-verified and is correct in this report.
2. Take-Rate percentages are for long-term ARP agreements only. It does not include variable length ARP agreements available beginning in FY97.
3. Take-Rate for FY01 and later Initial Eligible ARP Agreements of 5 years or more.
4. Extremely small pool of eligibles.
5. Small eligibility pool.
6. Reinstitution of limited 50% up-front eligibility for selected PAFSCs
7. Program started late, some eligibles left AF and were not included in bonus take rate as nontakers
8. Force Management (FM) year; ARP program released after meeting eligible voluntary separation targets. Removing pilots that choose to participate in voluntary FM resulted in a 59% take rate.

Problem Statement

While Air Mobility Command (AMC) is currently projecting strong pilot personnel levels, the forthcoming major airline hiring spree may significantly hinder pilot manning levels. This research evaluated whether AMC pilot retention will be an issue in the next ten years and why millennial pilots may decide to find other employment.

Research Objectives

The objective of this research was to assess if AMC will face a pilot retention problem in the upcoming decade. Furthermore, it examined if a “flying only” career path increases AMC pilot retention after an officer’s pilot training commitment, a ten year requirement, had concluded. This study accepted the assumption that no significant event will preclude major airlines from hiring, along with the FAA not again extending the retirement age of pilots.

Primary Research Question

- If the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years?

Investigative Delphi Study Questions

- What changes do you think the AF should make in the next 10 years to influence AMC pilot retention?
- In your opinion, what are the main reasons millennial pilots, pilots currently nearing the end of their UPT commitment, may decide to leave active duty?
- If the AF were to develop and implement a dual career track (flying only), how do you think this would impact AMC pilot retention?
- If you were designing a dual career track (flying only), what would it look like?
- What secondary effects would a dual career track have on the AF in general?

Research Focus

This research focused on Mobility Air Force (MAF) pilot retention only and did not include Combat Air Force (CAF) or Special Operations pilots. MAF, CAF, and special operation cultures are each separate and unique forcing the research to examine only one.

Methodology

This research used a Delphi study to accumulate and evaluate the expert opinions of AMC pilot subject matter experts. Because of time limitations, three rounds of questions were performed. All three series of questionnaires were emailed to the participants. The first round of questions aimed at collecting the judgments from the panel answering the primary and investigative questions. The researcher next melded the responses to produce the second round of questions. The second round asked the experts to use a Likert scale to evaluate the responses from the first round. In the final round, the officers were shown the cumulative results for round two and offered a chance to adjust their answers if desired.

Assumptions/Limitations

This study was performed given the current officer development track created by the Goldwater-Nichols Act of 1986, which produced the current promotion “up or out” mentality. In addition, the researcher attended a Chief of Staff of the Air Force directed Air Force Smart Operations (AFSO) event researching whether a “fly only” track would bolster fighter pilot retention. This event demonstrated that AF senior leaders where

open to the idea of a “fly only” track. Next, the researcher assumed the airline pilot hiring spree is inevitable and the AF will not be able to match the civilian compensation.

Implications

This research informs senior AF leaders about AMC pilot retention in the forthcoming decade and if a “fly only” track will help retain pilots in AMC. Examining the opinions of AMC experts and emphasizing the reasons that talented aviators decided to switch employers is vital to combat readiness. This research will also provide secondary effects of a “fly only” track.

II. Literature Review

Chapter Overview

To properly understand the potential situation facing AF pilot retention, this chapter will begin with the history of AF pilot retention. Next, the major potential job enticer, commercial airlines hiring, will be reviewed. It is hypothesized that medical doctor career development and management may have enough comparable factors to provide insights. AF medical doctor's literature will then be studied to understand if the AF has any history of allowing officers to choose their career path. Finally, career autonomy literature will be examined to see if job independence boosts retention.

AF Pilot Retention History

The AF has encountered pilot retention problems several times in its nearly seventy year history. The AF even reluctantly admitted that "pilot retention is cyclic and airline hiring has more effect on pilot retention than anything the Air Force can do internally" (Rated Management Document, 1995). The first pilot retention episode began in the late 1970's. "The shortage was not due to a large increase in requirements...instead, this problem was caused by pilots exiting (either retiring or voluntarily separating) the force in large numbers" (Ballard, 1998). The low number of pilots was able to be alleviated by increasing pilot production over the next half decade.

The second pilot retention scare came in the late 1980's, and was similar to the current situation the Department of Defense (DoD) finds itself in today. The commercial airlines were forecasting a substantial hiring wave. However, this obstacle was warded

off by an immense draw-down following the collapse of the Soviet Union. Furthermore, the Gulf War vaulted oil prices, which in turn caused the airlines to furlough pilots instead of hiring (Ballard, 1998).

The most recent predicted pilot deficit came a decade after the second scare. Around the mid 1990's the AF was predicting another massive pilot shortfall. In response to this forecast, the Chief of Staff of the Air Force (CSAF) elected to increase pilot production. With a bustling economy, Vietnam-era pilots approaching the FAA's compulsory retirement age, and anticipated airline growth; AF retention models showed a large pilot discrepancy (Ballard, 1998). Nonetheless, these calculations never came to fruition because of the September 11th attack on the United States. The assault on the United States not only slowed the economy, but also had a dramatic negative effect on the airline industry causing companies to furlough pilots. With military operations ramping up and airline hiring coming to an abrupt halt, military pilots did not leave in the prophesied droves.

Airline Hiring Surge

“Airlines will hire about 20,000 pilots over the next 10 years” (Everstine, 2015). This unprecedented boom in the airlines comes from a growing economy and airline industry coupled with a five year hiring freeze. The hiring halt was primarily contributed to a sluggish economy and the FAA increasing the pilot retirement age. Southwest has even gone on record saying it will be “more important to recruit from the military” to help with the shortage (Eversite, 2015). Adding to the reasons military pilots are being targeted for hiring are the 2013 FAA airline hiring requirements. The FAA mandated

airlines hire pilots with at least 1,500 flying hours. However, the FAA allows an exemption for military aviators by shrinking the requirement in half to 750 hours. The projected airline hires can be seen in the figure below.



Figure 4: Major Airline Hiring Versus Air Force Attrition, with Future Estimated Major Airline Pilot Hiring (shown by the dashed red line) (Sweeney, 2015)

AF Medical Doctors

The AF has a track record of allowing specific professional fields, which have difficulty retaining officers, the choice of what type of career he/she desires. While such choices are currently not available to AF line officers (the category in which pilots fall), AF medical doctors are allowed to choose between three unique career paths. The first path, clinical/operational, is designed for officers who wish for their primary duty to be working with patients. This path would be the pilot equivalent of a “fly only” track. Clinical/operational doctors “are expected to maintain their full scope of clinical

credentials and competency and currency related to their specialty” (Dorenkott, 2014). The second career route, academic, enables officers to either continue with their own research or be part of an academic faculty. In this pathway, doctors may support residency/fellowship programs, teach at the USAF School of Aerospace Medicine, or be a Master Academician (Dorenkott, 2014). A select number of pilots are also allowed an academic path by earning their master’s or Phd and then teaching at the Air Force Institute of Technology (AFIT) or the United States Air Force Academy (USAF). The final choice allotted to AF medical doctors is the traditional office command track. This path mirrors pilot development in that both officers are expected to maintain their credentials, aviation currencies in comparison to clinical credentials, while demonstrating the ability to lead both officers, enlisted, and civilian personnel.

A distinct difference between line officers and medical corps officers is military developmental education. Basic Developmental Education (BDE) more commonly referred to as Squadron Officer School (SOS) is not required for medical core officers (Dorenkott, 2014). The same is true for Intermediate Developmental Education (IDE) also referred to as Air Command and Staff College (ACSC). Both of these schools are mandatory for pilots, with a few exceptions.

Career Autonomy

The AF provides career autonomy in the form of the Airman’s Development Plan (ADP). The ADP is an online document afforded to all AF personnel to portray their career wishes and job destinations to Air Force Personnel Command (AFPC). At AFPC, aviators are assigned to a functional manager who reviews officers’ ADP’s and attempts

to pair officer's desires with the needs of the AF. While this document helps with autonomy, it does not provide true career independence. In a recent AF paper on talent retention, a senior AF officer penned, "the current career management system (assignment and promotion) is broadly incompatible and even dysfunctional for this cohort (younger officers), with a corresponding negative impact on retention" (Violette, 2015). The opinion paper continued by stating that the AF's personnel policies are archaic and expects Airmen to have stay at home spouses. The unwritten expectation that spouses should stay at home creates a rift between the Airman and his or her spouse, which may lead to families choosing to not stay in the AF. Furthermore, "millennial value sets regarding marriage, parenting, income, and career are shifting dramatically," whereas the AF still retains its "1950's" model (Violette, 2015).

The reason for promoting career autonomy is that it "has been linked to higher job satisfaction and intrinsic motivation" (Langfred, 2013). In addition, autonomy "can contribute to overall physical and psychological well-being" (Langfred, 2013). These factors all contribute to autonomy and therefore, an increase in job satisfaction, which has a direct impact on retention. Moreover, additional autonomy in the AF would provide better officers.

Guay (2005) explains career autonomy through the Self-Determination Theory (SDT). "SDT is an approach to human motivation that highlights the importance of three fundamental psychological needs, namely autonomy, competence, and relatedness, to understanding optimal functioning". By allowing career autonomy, Airmen will have more motivation and may perform at a higher level. This idea could not come at a more critical point in AF history. The AF is experiencing one of the greatest drawdowns,

which in turn demands that all AF personnel perform at their highest level to accomplish an ever increasing workload.

“Intrinsic motivation reflects the highest degree of autonomy. It refers to engaging in an activity for its own sake and to experience the pleasure and satisfaction derived from participation” (Guay, Senecal, Gauthier, & Ferret, 2003). This is exactly why the AF should consider allowing more career autonomy. Airmen join the AF because of their internal motivation to serve their country. They have chosen a career field whose pay is augmented intrinsically. However, this internal motivation is stifled when the AF does not allow one’s career to change vectors as life progresses.

Summary

This chapter provided information on AF pilot retention history, the current airline hiring surge, and the career tracks of AF medical doctors. This chapter also examined the benefits of career autonomy and how autonomy increases retention. This material supplies a precise context pertinent to the analysis performed Chapter Four.

III. Methodology

Chapter Overview

This chapter examines the research method used and how it was employed. Moreover, the chapter reviews both the Delphi study and the Likert scale. Finally, this chapter addresses the techniques used to develop the surveys.

Delphi Technique

“The Delphi process is a unique method of eliciting and refining group judgment, based on the rationale that n heads are better than one when exact knowledge is not available” (Jolson & Rossow, 1971). There are 11 steps in a Delphi study as listed in Table 2. The Delphi technique was developed by RAND to “be used in long range technically forecasting where a group of experts from diverse backgrounds are called upon to make decisions” (Tersine & Riggs, 1976).

Table 2: Delphi Forecasting Steps (Ogden, Petersen, Carter, & Monczka, 2005)

DELPHI FORECASTING STEPS	
Step	Activity
1	Define the problem
2	Select willing and knowledgeable participants
3	Structure the initial questionnaire
4	Select the medium
5	Questionnaire 1: Initial input
6	Combine and refine the initial predictions
7	Questionnaire 2: Likelihood ratings
8	Compute the average and range
9	Questionnaire 3: Reconsideration
10	Re-compute the average and range
11	Further analysis

The Delphi process was selected by the researcher because the research attempted to forecast the future of AMC pilot retention. Because this knowledge is not available, the researcher called upon experts in the AMC pilot community to help define what challenges and solutions are available if the AF continues with its current policies.

Delphi studies “increase the creative productivity of group action, facilitate group decision, help stimulate the generation of critical ideas, and give guidance in the aggregation of individual judgments” (Delbecq, Van de Ven, & Gustafson, 1975). The five Delphi objectives are:

- 1) To determine or develop a range of possible program alternatives
- 2) To explore or expose underlying assumptions or information leading to different judgments
- 3) To seek out information which may generate a consensus on the part of the respondent group
- 4) To correlate informed judgments on a topic spanning a wide range of disciplines
- 5) To educate the respondent group as to the diverse and interrelated aspects of the topic. (Delbecq, Van de Ven, & Gustafson, 1975)

The Delphi method has fewer flaws than other predicting simulators (Linstone & Turoff, 1975). However, there are still limitations to using a Delphi study. A major misstep when applying this process is to select the wrong individuals to be a part of the panel of experts (Tersine & Riggs, 1976). Misidentifying an individual as an expert in the field of study may invalidate both their position and recommendations. A second limitation of this type of research is the timeline (Tersine & Riggs, 1976). Delphi studies have several rounds of questionnaires to obtain the information required for the research, this length of time demands that experts be committed to participating. The third

limitation is that individuals reviewing the findings from the Delphi study may not take the results to heart because of the distant future the conclusions are referencing (Tersine & Riggs, 1976). Meaning, the leaders reviewing the study may be more distressed with current adversities. Finally, because this research is solicited in a nameless fashion, it eliminates the social emotional rewards earned from physically attending a group problem solving session (Delbecq, Van de Ven, & Gustafson, 1975).

Several steps were taken to overcome the limitations. First, all pilots chosen were Instructor Pilots (IPs), the classification awarded by the AF once a pilot has mastered their specific aircraft, or in AF terms Major Weapon System (MWS). The specific IPs selected were chosen because they recently finished their initial AF commitment and went through the decision making process to either stay in or leave Active Duty (AD) AF. Also, the preponderance of officers selected were IPs because they have had the most interaction with millennial pilots. Additionally, at least two IPs from each AMC MWS were selected. Second, all officers agreed beforehand to participate in the three round study. Finally, every AMC MWS operational leadership category was represented. The leadership categories were Operations Group Commanders (OG/CC) and Squadron Commanders (Sq/CC). The specific leadership categories were chosen due to the day to day relationship between the senior leaders and the pilots who will be making the decision to stay in or get out.

Likert Scale

“Likert scales were originally developed by Rensis Likert, a sociologist at the University of Michigan from 1946 to 1970. Likert was concerned with measuring psychological attitudes, and wished to do this in a ‘scientific’ way. Specifically, he

sought a method that would produce attitude measures that could reasonably be interpreted as measurements on a proper metric scale” (Uebersax, 2006). These attitude measures, or expert opinions, are primarily attained through questions that show “participant’s preferences or degree of agreement with a statement or set of statements” (Bertram, 2009). To show a participant’s agreement or disagreement, the Likert scale provides responses, normally from one to seven or one to five. This research used both a seven and five point scale. The seven point scale was used to measure likelihood, whereas the five point scale was used to measure impact. The scales presented to the officers are below in Figure 5.

Likelihood	Impact
1 = Highly unlikely to occur	1 = Little to no impact
3 = Somewhat unlikely to occur	3 = Somewhat impactful
5 = Somewhat likely to occur	5 = Highly impactful
7 = Highly likely to occur	

Figure 5: Likert Scales Presented to Research Participants

The different ranges of Likert scales yield information called ordinal data. Likert scale responses are labeled ordinal data because each participant does not measure the levels between the two answers the same. For example, all research contributors do not measure the distance between strongly agree and agree the same. This lack of consistence is the major deficiency of using a Likert scale and if not realized the researcher may come to a “wrong conclusion” (Jamieson, 2004). Because of this ordinal data, researchers “should use the median as the measure of central tendency” (Jamieson, 2004).

Panel Selection

The experts selected to be on the panel are the backbone for the research. When choosing the participants the author used the following “five basic criteria:

- 1) They must have a basic knowledge of the problem area and be able to apply that knowledge.
- 2) They must have a good performance record in their particular areas.
- 3) They must possess a high degree of objectivity and rationality.
- 4) They must have the time available to participate to the conclusion of the program.
- 5) They must be willing to give the amount of time and effort to do a thorough job of participation.” (Tersine & Riggs, 1976)

The participants must feel personally invested, have expertise, and sense their involvement will contribute to the solution to participate effectively (Delbecq, Van de Ven, & Gustafson, 1975).

The Tersine and Riggs five basic criteria were used to select the panel for this research. All officers selected were AMC aviators and serving or served at either the Operations Group or Squadron levels, this ensured that all participants had a basic knowledge of pilot retention. Additionally, by being chosen by the AF to command or fly as an instructor pilot demonstrated the officers’ strong performance record and ability to be objective. Finally, all panel members agreed to participate with the understanding that the research would require three time consuming rounds of questionnaires.

Round One Questionnaire

Questions for round one were developed following the researcher attending an AFSO event held in Washington D.C. concerning fighter pilot retention and whether a dual track could possibly be used to bolster current retention numbers. Questions

presented in this study were similar to the questions raised about CAF retention, but with a MAF variation. In addition, the researcher queried the panel on the effect a dual track would have on the AF. The experts were also asked to expand on their answers and in one case asked to provide as many scenarios as possible. The initial questionnaire was examined by three pilot Field Grade Officers (FGO). After making a few revisions, the questionnaire was emailed to the 18 participants and requested to be returned in two weeks. The number 18 was chosen to ensure all AMC MWS's were represented in all three categories: OG, Sq and IP. Additionally, a study found that a 15 person panel of experts is all that is required to ensure that a separate panel of experts will not have drastically dissimilar findings (Martino, 1985). Appendix A contains the entire version of the round one questionnaire.

Round One Questions:

- 1) If the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years? Describe as many plausible scenarios as possible.
- 2) What changes do you think the AF should make in the next 10 years to influence AMC pilot retention?
- 3) In your opinion, what are the main reasons millennial pilots, pilots currently nearing the end of their UPT commitment, may decide to leave active duty?
- 4) If the AF were to develop and implement a dual career track (flying only), how do you think this would impact AMC pilot retention?
- 5) If you were designing a dual career track (flying only), what would it look like?
- 6) What secondary effects would a dual career track have on the AF in general?

The panel members were given two weeks to complete the questionnaire. Of the 18 members, 15 completed the survey on time, two did not respond, and one was allotted an

additional week to complete the study. Table 3 below shows the participation from round one.

Table 3: Round One Participation

	OG/CC	Sq/CC	IP	Total	Percent
Agreed Participants	3	5	10	18	
Round 1 Participation	2	4	10	16	89%

Following the receipt of the completed round one surveys, the researcher “combined and refined” the responses (Ogden, Petersen, Carter, & Monczka, 2005). This combining and refining process consisted of pairing similar responses, making grammatical error corrections, and disposing of responses that were not in the realm of possibility. Finally, due to time limitations and a desire for max participation, non-applicable topics were eliminated.

Round Two Questionnaire

Following round one, two participants were unable to partake and withdrew from the research. The second round questionnaire was developed by consolidating the participants’ responses from round one and asking these experts to use a Likert scale to rate both the likelihood of the Air Force implementing the response and the impact the proposal would have. The likelihood Likert scale ranged from one to seven (1=Highly unlikely to occur, 3=Somewhat unlikely to occur, 5=Somewhat likely to occur, 7=Highly likely to occur). Whereas the impact Likert scale ranged from one to five (1=Little to no impact, 3=Somewhat impactful, 5=Highly impactful). The different Likert scales were due to the type of question being presented. The following is an example of a question

from the second round. The entire second round questionnaire can be found in Appendix

B. Round Two Example:

Likelihood
1 = Highly unlikely to occur
3 = Somewhat unlikely to occur
5 = Somewhat likely to occur
7 = Highly likely to occur

Impact
1 = Little to no impact
3 = Somewhat impactful
5 = Highly impactful

Build manning programs to deliberately produce pilots at a rate to fill long term exit ramp programs such as: pilot training instructors, FTU instructors, broadening programs, crossflow, officer development, staff officer billets, and create pilots for the line with 10-15 years of experience. Likelihood __ / Impact __

The expert team was given three weeks to complete the survey. The additional week was added due to the December/January holiday season. Thirteen of the sixteen participants completed the second round on time. The additional three were given a week extension. The research involvement percentage is below in Table 4.

Table 4: Round Two Participation

	OG/CC	Sq/CC	IP/EP	Total	Percent
Agreed Participants	2	4	10	16	
Round 2 Participation	2	4	10	16	100%

To complete the second round, the researcher computed both the average and range for each scored response to be presented in the final round.

Round Three Questionnaire

The third and final round questionnaire returned each officer's respective second round survey with two additions. The collective average and range for the likelihood and impact of the responses were included. With this new information, the AMC experts were asked if they would like to adjust their responses or leave them the same. If the

participant elected to not adjust their answer, they were asked to comment on their position. The consensus changed very little from round 2 to round 3. The greatest change was from the question 1 response, Overproduce Pilots. The average response from the panel barely increased half a point. The panel's average scores for each question from round 2 and 3 can be found in Appendix C.

Like the first round, the participants were requested to return the survey in two weeks. Fifteen of the sixteen officers were able to complete the survey in the requested time period. The remaining contributor was given a week extension. The research involvement percentage is below in Table 5.

Table 5: Round Three Participation

	OG/CC	Sq/CC	IP/EP	Total	Percent
Agreed Participants	2	4	10	16	
Round 2 Participation	2	4	10	16	100%

Summary

The Delphi method collected answers to six questions posed in round one. In the second round, participants were presented responses collected in the first round and requested to grade the impact and likelihood of each response using a Likert Scale. During the final round, participants were shown the average likelihood and impact ratings from the panel and asked if they would like to alter their answers now knowing the group's position. If the AMC expert preferred to not adjust their response they were asked to comment on why. The data amassed through the Delphi study was the basis for the analysis conducted in Chapter Four.

IV. Analysis and Results

Chapter Overview

This chapter will explore the Delphi study results. “Delphi data provides insight into the likelihood of a certain prediction occurring and the impact that its occurrence would have” (Ogden, Petersen, Carter, & Monczka, 2005). Of the sixteen officers surveyed, 12.5% were Operations Group Commanders, 25% were Squadron Commanders and 62.5% were Instructor Pilots. All fifty surveyed question responses were analyzed both as pertaining to the question and how similarly rated responses could be grouped together to imply further information about AMC pilot retention. Finally, all responses were given paraphrased labels, the full responses can be found in Appendix B.

Question 1

The responses supplied by the panel were in reply to the researcher’s first question: If the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years? The panel’s scores for likelihood and impact of each response are below in Figure 6.

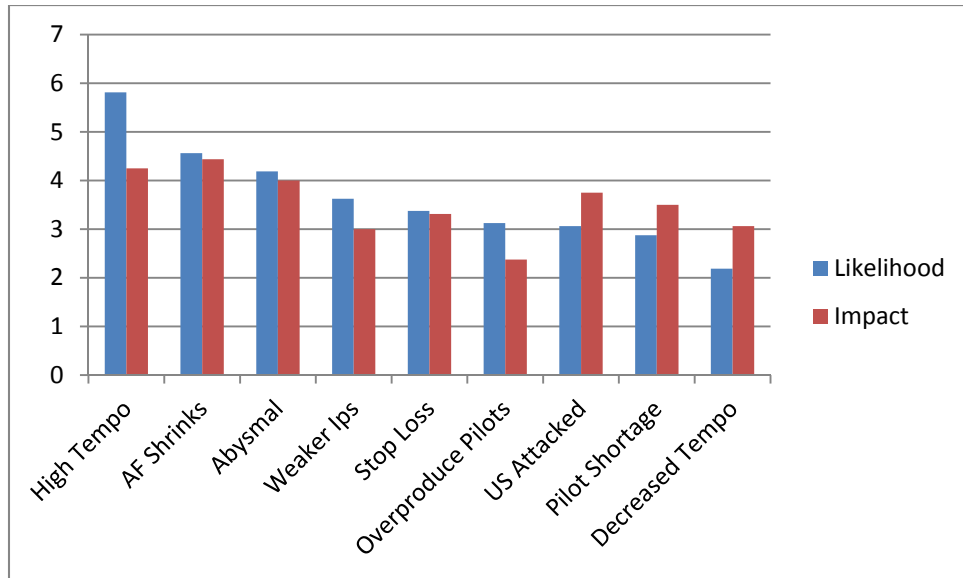


Figure 6: Question One Results

While the response High Tempo: operations tempo remains high, but no major force-on-force wars was found to be most likely, the response AF Shrinks was scored the most impactful. Both responses agreed that AMC operations tempo would remain elevated; however, the response AF Shrinks predicted manning levels would decrease due to budgetary issues causing a greater stress on the pilot force. The panel also concluded that the least likely response was Decrease Tempo that predicted a reduction in operations tempo. Question one scores call for a decrease in operations tempo to help bolster AMC pilot retention.

The largest disagreement from question one was the likelihood from the response US Attacked. Question one's US Attacked was: we receive terrorist attacks on US soil, retention dissolves as patriotism soars. The likelihood of the response increased with rank, with the lowest ranking finding it unlikely that there would be a terrorist attack on US soil. Every officer believed a terrorist attack would be impactful on retention. The reactions are below in Table 6.

Table 6: Question 1, US Attacked Averages

	Panel	OG/CC	Sq/CC	IP
Likelihood	3.0625	5	3.25	2.6
Impact	3.75	3	3.5	4

Question 2

The second question posed by the researcher was: What changes do you think the AF should make in the next 10 years to influence AMC pilot retention? Of note, all responses to this question were rated at least somewhat impactful on retention. However, all respondents did not believe the AF was likely to enact any of the suggestions, which included the response Career Pilot: creating a separate fly only track. The panel's response to the second question is below in Figure 7.

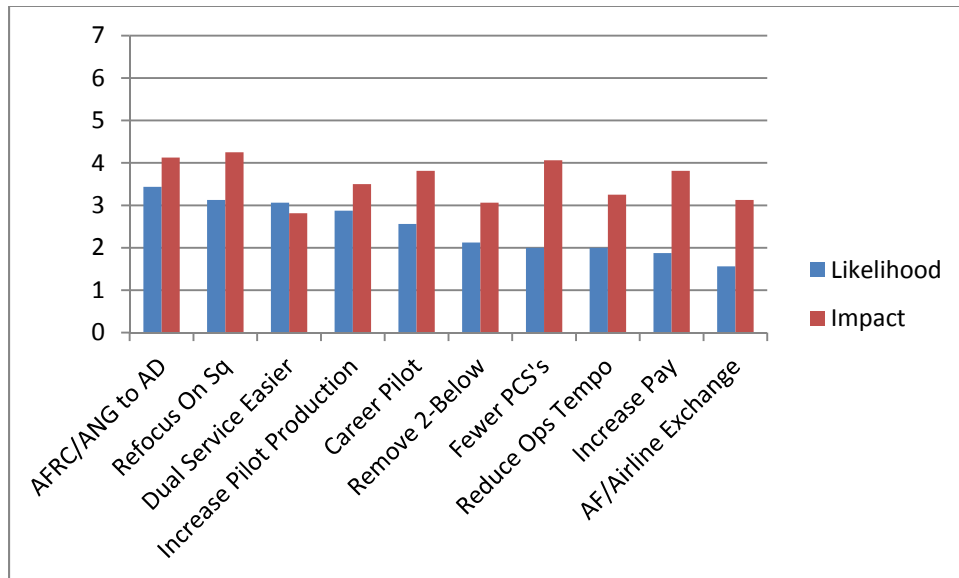


Figure 7: Question Two Results

The highest scored impact from question two was the response Refocus On Sq. The Refocus On Sq response was: the Air Force must refocus on the squadron as the basic organization structure. Table 7 below shows the retention impact of the AF

concentrating on strengthening squadrons by returning mission support personnel into individual units. This response was not inclusive to just flying squadrons, but the AF as a whole.

Table 7: Question 2, Refocus On Sq Averages

	Panel	OG/CC	Sq/CC	IP
Likelihood	3.125	4	4	2.6
Impact	4.25	4	4.25	4.3

Question 3

The next question asked to the panel was: In your opinion, what are the main reasons millennial pilots, pilots currently nearing the end of their UPT commitment, may decide to leave active duty? Other Opportunities was rated the most impactful and likely. Additionally, Figure 8 shows the three most likely responses were Other Opportunities, Females Starting Family and Lifestyle. Two of the top three responses pertained to quality of life. The top three likely responses paint a disturbing picture. Intermixed, the panel believes pilots will choose to leave the military not only for money, but because they do not desire the military way of life.

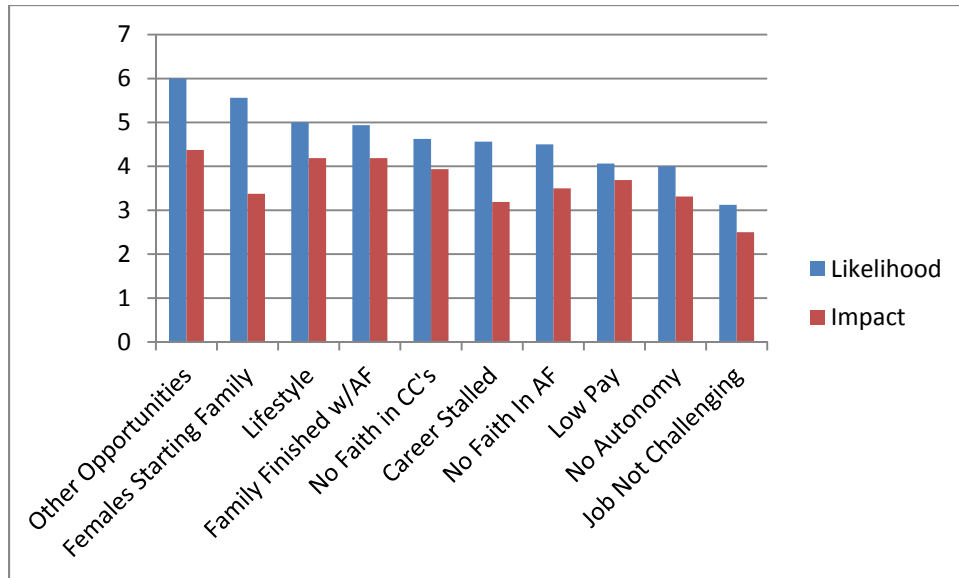


Figure 8: Question Three Results

A positive finding from question three for the AF was the impact grade given to the response Job Not Challenging. Pilots ranked the response, millennials do not feel challenged, between somewhat and not impactful. Meaning, the AF provides a stimulating and difficult environment for its flyers to work in. Therefore, the challenging flying environment today's pilots find themselves in will help retention.

A significant observance was the disagreement between Operations Group Commanders and the rest of the panel concerning the response No Autonomy. The No Autonomy response was: millennials may get out if they feel their development is being stifled...they want to be free to move between jobs. The OG/CC's felt very strongly that millennial officers were likely to leave the military if being forced into a career or job they don't like. Conversely, younger officers did not find this response to be likely. Table 8 below shows the likelihood discord. While there is disagreement, a fly only track could be one of several options allotted to help create career autonomy.

Table 8: Question 3, Career Autonomy Averages

	Panel	OG/CC	Sq/CC	IP
Likelihood	4	7	3.75	3.5
Impact	3.3125	4	3.25	3.2

Question 4

The fourth question asked was: If the AF were to develop and implement a dual career track (flying only), how do you think this would impact AMC pilot retention?

The two highest ranked likelihood responses to question four were the responses Bad In Long Run and AF Will Mismanage. These responses questioned the financial incentive of a dual track system, believed to be capped at Major, and the AF's ability to manage such a program. According to the panel, the AF is unwilling and unable to create a dual track program that is financially active and properly executed. See Figure 9 below for question four results.

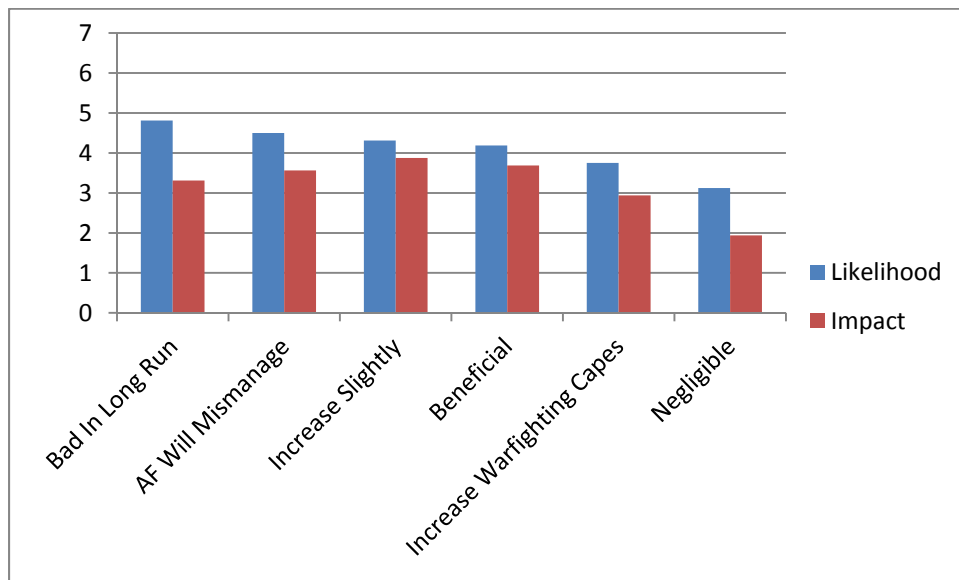


Figure 9: Question Four Results

The response Increase Warfighting Capes was the second lowest rated impact response. The idea of a dual track system bolstering AMC's combat prowess was not even rated somewhat impactful. Additionally, the response was found to be somewhat unlikely to occur. These ratings coupled with Bad In Long Run graded as somewhat likely lead to the conclusion that a dual track system would not be beneficial.

Squadron Commanders did not agree with Group Commanders and Instructor Pilots on the highest rated likelihood response, Bad In Long Run. OG/CC's and IP's found the response to be between somewhat and highly likely, whereas Sq/CC's rated the response even less than somewhat unlikely. Sq/CC's may have felt the desire to serve one's country may be strong enough to offset the potential loss of earnings. Table 9 below shows the disagreement.

Table 9: Question 4, Bad In Long Run Averages

	Panel	OG/CC	Sq/CC	IP
Likelihood	4.8125	6	2.75	5.4
Impact	3.3125	3	3	3.5

Question 5

The fifth question asked was: If you were designing a dual career track (flying only), what would it look like? The panel rated the response 2 Tracks After Capt as most likely to be implemented; however, the likelihood was scored as neither likely or unlikely. Furthermore, the response 2 Tracks After Capt's likelihood ranking may be contributed to the Chief of Staff of the Air Force General Welsh's inquiry into a dual track system mandating a rank limit of Major. Additionally, all responses to the fifth question were not found to be likely.

The response 0 Boxes To Check was assessed as the least likely to be implemented. This response called for pilots to only focus on flying, not leadership, and to top out at Lieutenant Colonel. The panel most likely scored the response so low because of the AF's mandate for PME for all ranks. For every rank/position in the AF, there are several requirements for continued military and/or civilian education. However, the response was found to be impactful.

The response Highly Competitive was regarded as the most impactful. This response called for a dual track program to not only be extremely competitive and selective, but also provide financial and base of preference incentives. A potential roadblock to implementing this idea relates back to 0 Boxes To Check. This response garnered the second highest impact, but the AF currently unofficially uses the box check system to define what is competitive. Meaning, the AF uses the valedictorian equivalent of military education to provide assistance in determining advancement. Question five's outcomes are below in Figure 10.

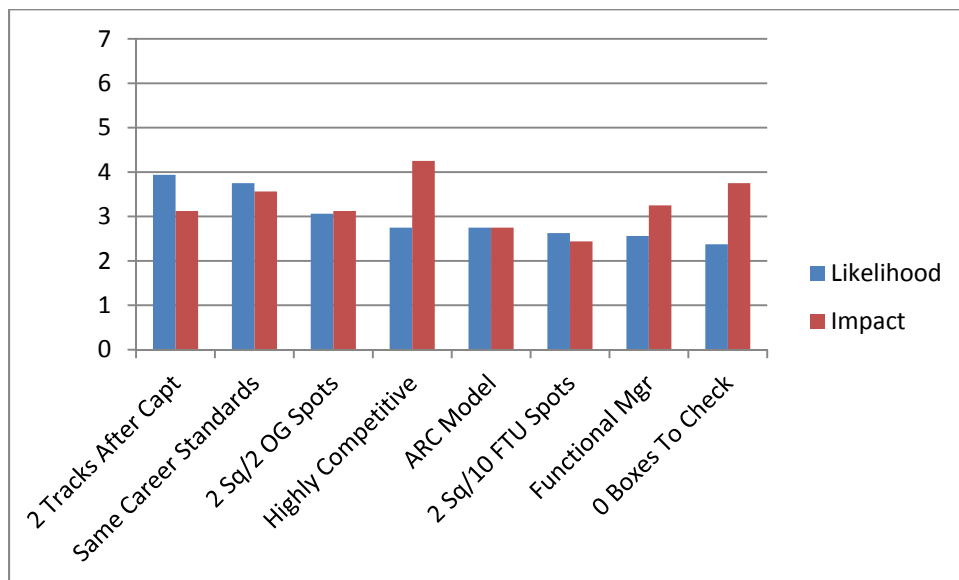


Figure 10: Question Five Results

The greatest disagreement in question five was how the dual track officers would be employed. Sq/CC's and IP's believed it was less than somewhat unlikely for the AF to provide two dual track billets to each Sq and Gp. However, OG/CC's thought this response was somewhat likely to occur. While the parties may not agree on the manning numbers, everyone would agree that an increase in manning would be beneficial to help battle the operations tempo.

Table 10: Question 5, 2 Sq/2 OG Spots Averages

	Panel	OG/CC	Sq/CC	IP
Likelihood	3.0625	5	2.5	2.9
Impact	3.125	2	2.5	3.6

Question 6

The final question asked was: What secondary effects would a dual career track have on the AF in general? Of note is that five of the six responses when asked about consequential effects of a dual track program were negative. Two of the negative responses scored the highest impact, the responses No Career Broadening and Increased Workload. Both responses predicted unprofessional officers and raised concerns over the effect they would have on their squadron. Additionally, the response No Career Broadening scored the highest likelihood with a rating of somewhat likely to occur.

The response Budget Increase scored the lowest likelihood. This reaction to question six mentioned increased funding would be a secondary effect to cover the cost of the additionally flying billets in a squadron along with the increased maintenance costs. Again, the panel does not believe the current conservative fiscal environment

would allow for any further financial expenditures. Question six's ratings are in Figure 11.

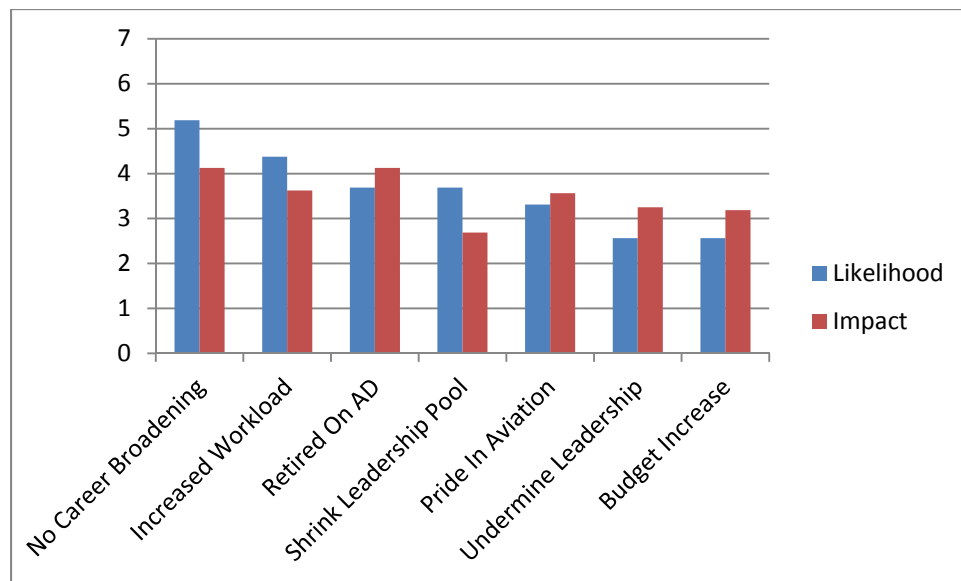


Figure 11: Question Six Results

There was a notable disagreement between OG/CC's and IP's when scoring the response Shrink Leadership Pool. The response implied that a fly only track of officers would lead to a smaller officer pool to select senior leaders. IP's did not feel that a dual track program would decrease the quality of candidates for leadership positions. However, OG/CC's adamantly disagreed. The disparity between the two parties was also found in their impact ratings. The contentious results to response five are below in Table 11.

Table 11: Question 6, Shrink Leadership Pool Averages

	Panel	OG/CC	Sq/CC	IP
Likelihood	3.6875	7	4.5	2.7
Impact	2.6875	5	2.75	2.2

Analysis Matrix

To aid in discovering “high-level findings”, the author used the same matrix style utilized in Supply Management Strategies for the Future: A Delphi Study (Ogden, Petersen, Carter, & Monczka, 2005). This format enables the panel’s response scores to be paired together allowing further findings to be extracted. The matrix’s scales were computed by taking the difference between the highest and lowest panel ratings and then dividing by three. Division by three corresponded with low, medium, and high ratings. Two quadrants found in Figure 12 below will not be explored due to zero responses, High Likelihood/Low Impact and Low Likelihood/Low Impact.

Likelihood	High	6		Q3R3 Q3R4 Q3R10 Q4R2 Q6R1	Q1R1 Q3R2 Q6R2 Q1R9 Q3R6 Q3R1 Q3R8
	Medium	4.333	Q4R5	Q1R4 Q3R5 Q5R7 Q1R5 Q3R7 Q6R5 Q1R7 Q4R6 Q6R6 Q1R8 Q5R1 Q2R2 Q5R3 Q2R5 Q5R6	Q1R3 Q2R7 Q4R3 Q1R6 Q3R9 Q5R5 Q2R6 Q4R1 Q6R3
	Low	2.666		Q1R2 Q2R10 Q6R4 Q2R4 Q5R4 Q6R7 Q2R9 Q5R8	Q2R1 Q2R3 Q2R8 Q5R2
		1	1	2.333	3.666 5
			Low	Medium	High
			Impact		

Figure 12: Delphi Results

High Likelihood/High Impact

Response scores in this category fell into a likelihood range from 6 to 4.333 and an impact span of 3.666 to 5. The panel's answers from this section reveal a difficult time ahead for the AF in terms of pilot retention. The factors leading to this finding include officers believing the high operations tempo to continue, loss of faith in commanders, the AF shrinking further in size, and spouses no longer wishing to live the AF lifestyle. Additionally, the panel feels that with the upturned American economy offering more outside opportunities now is the time to exit the military.

High Likelihood/Medium Impact

The responses in this classification also had a likelihood rating from 6 to 3, but an impact scale of 2.333 to 3.666. This category revealed officers are likely to leave the AF if they are no longer able to obtain career or life goals. Specifically, women may choose to leave AD because it is perceived to be easier to balance a family and work in the guard or reserve. Furthermore, new retention programs will not be successful because the AF struggles with personnel management. Finally, a dual track program would not be successful because such a program would leave too many additional duties for officers left in the normal development track and insufficient pay if capped at Major.

High Likelihood/Low Impact

Zero responses fell into this section.

Medium Likelihood/High Impact

The responses in this grouping had a likelihood rating from 4.333 to 2.666 and an impact scale of 5 to 3.666. Correlations from these responses were answers to the predicted retention problem. The responses graded as most impactful to improving

retention concentrated on increasing quality of life, bolstering pay, and returning support staff to the squadron level. Furthermore, the return of support staff to the squadron level applied to all squadrons and not just flying squadrons. However, these responses have a low likelihood of being implemented by the AF.

Medium Likelihood/Medium Impact

The answers in this classification also had a likelihood rating of 4.333 to 2.666, but an impact span of 3.666 to 2.333. This section had the largest number of responses. When all the responses were combined, they presented a more employee friendly AF. Scenarios call for making dual military service (airmen married to other airmen) more manageable and making it easier for airmen to switch career fields. Furthermore, if there is to be a dual track program, make it more financially agreeable by allowing promotions to be capped at Lt Col. Because of the low likelihood and impact levels involved with these responses, they are not likely to be employed. Although, the Navy recently made making dual military service a top priority.

Medium Likelihood/Low Impact

There was only one response in the section. The likelihood scale was from 4.333 to 2.666 and an impact range of 1 to 2.333. The panel found that the up or out progression of the DoD not to be a problem by scoring the impact very low. However, due to the Secretary of Defense reviewing the up or out program, the officers believed that the officer progression timeline may be changed.

Low Likelihood/High Impact

Response totals in this classification were from a likelihood range of 2.666 to 1 and an impact area of 5 to 3.666. While the low likelihood shows that the

implementation of such ideas is not expected, the impact would have a profound impact on retention. The overarching theme of the perceptions called to make military service more like civilian careers. The responses called for increase in pay, separate tracks for pilots, fewer household moves, and no career boxes to check. The most likely road forward to accomplishing these requests would have to be balance between civilian career fields and what is sometimes referred to as the military calling.

Low Likelihood/Medium Impact

Ratings in this grouping also had a likelihood range between 2.666 and 1, but an impact scale of 3.666 to 2.333. The congruencies found, although not likely, call for new programs to tackle the predicted pilot shortage. Suggestions included a hiatus from active duty to fly with the civilian airlines, setting up a functional manager for a dual track system in addition to dual track manning being added to current squadron personnel levels, and removing the two below promotion system. Ideas such as these would definitely be considered outside the box, but maybe right on point in addressing what is predicted to be the nation's most significant pilot shortage to date.

Low Likelihood/Low Impact

Zero responses fell into this section.

Summary

This chapter examined the ratings from fifty responses to six questions posted to a panel of AMC aviation experts. Furthermore, analysis was performed to see what additional conclusions could be made from similarly scored responses. The analysis

demonstrated numerous ideological differences between groups. This information in this chapter was used in the last chapter to shape the conclusion.

V. Conclusions

Chapter Overview

This final chapter summarizes the research conducted, in addition to the significance and limitations of the study. Future recommendations for investigation are then provided by the author to further the AF's understanding of pilot retention.

Summary of Research

This research queried sixteen MAF aviators. Their ranks spanned from Major to Colonel, and were comprised of AMC instructor and evaluator pilots along with flying Squadron and Operations Group Commanders.

The primary research question asked: if the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years? The panel found the most likely scenario to be the response High Tempo. High Tempo described the AF as continuing to have a high operations tempo and struggling to retain senior pilots, pilots completing their initial AF ten year contract. Time and time again, the officers expressed the toll the high operations tempo is taking on AMC pilots as demonstrated by the responses Lifestyle, High Tempo, and Reduce Ops Tempo. Moreover, any additional personnel cuts would further exaggerate the workload dilemma and therefore increase the retention problem.

What changes do you think the AF should make in the next 10 years to influence AMC pilot retention, was the first investigative question asked. The panel found the three most impactful solutions to be Fewer PCS's, Refocus On Sq, and AFRC/ANG To AD. The highest rated impactful solution was Refocus On Sq. Several policies,

especially budget and manning cuts, during the last few years have stripped the squadron of resources, from support staff to travel vouchers the AF has asked more and more of its flight crews. By refocusing on the unit level the AF has the opportunity to strengthen the work environment of the aircrews. The other two top answers called for fewer moves and more horizontal entry into AD for the guard and reserve members. Furthermore, the panel did not believe the AF was capable of taking steps to alter its course to help keep AMC pilots in the AF. This finding was astounding when paired with the fact that every response to the question of what changes the AF can make to influence retention was graded impactful.

The next investigative question was, in your opinion, what are the main reasons millennial pilots, pilots currently nearing the end of their UPT commitment, may decide to leave active duty. The most likely rated response was Other Opportunities. This answer coincides with commercial airline hiring models and confirms that pilot skills are a highly desired commodity in the commercial market. The second most likely reason, Females Starting Family, is a significant challenge. The AF must continue to address this response to ensure that this segment of the officer core has programs, that female officer's desire, in place to retain this talent pool.

The third investigative question asked how a dual track program would impact retention. The two most highly rated likelihood responses were Bad In Long Run and AF Will Mismanage. However, the greatest impact was from Increase Slightly. This response stated that retention would slightly increase, but a dual track program does not address the main retention problem, quality of life. Overall, the proposal of a dual track career for AMC pilots was not rated significantly impactful. Meaning, the AMC panel

did not believe a fly only track would not have a large effect on retention. Moreover, the panel felt that a dual track system would have a negative effect on flying squadrons by creating unprofessional officers and in turn the AF. Finally, the officers felt that the AF was not likely to institute a fly only position.

If you were designing a dual career track (flying only), what would it look like was the fourth investigative question. For this program to have the greatest impact, the panel called for it to be highly competitive and selective. Furthermore, the program called for multiple ranks to be available and for there to be a base of preference option. Additionally, all responses to this question thought to be not likely.

The final question asked was what secondary effects would a dual career track have on the AF in general. Five of the six responses were negative. In fact, the only positive response, Pride In Aviation, was graded as somewhat unlikely. The panel felt that a dual track program would not be advantageous to the AF.

Three main takeaways were revealed through the Delphi answer matrix. First, the answer to the primary research question was AMC pilot retention will be a major issue over the next decade. Next, two main factors spoiling retention are the high operations tempo and the shrinking AF budget. The third finding was the question of what does the AF do with officers that are not Below The Zone (BTZ) promoted or on the career track. The panel felt that the AF does not have a career plan for officers not on track for high leadership positions.

Significance of Research

This research predicts that AMC will have a retention issue over the next ten years produced from a high operations tempo coupled with historic airline hiring rates. Additionally, the research alerts AF leaders that career autonomy, fewer PCS's and guard and reserve members moving over to AD will be a few keys to solving the retention problem. However, a dual track is not the career autonomy AMC pilots believe to be the most impactful on retention. Finally, the results of this research suggests a reduction in operations tempo and increased resources to be allocated at the squadron level.

Recommendations for Future Research

The researcher found four main areas for future retention research. First, the above researched focused on all AMC pilots. A more concentrated aim should be made on AMC female pilot retention and AMC minority pilot retention. Both categories have lower retention rates than white males. Second, what do AMC aviators define as a high operations tempo? Quantifying a range for the number of days a year an AMC pilot feels comfortable being away from home and the number of PCS's a family can tolerate would provide a definitive insight for AMC senior leaders to help battle retention. Third, why were five of six responses to the idea of a dual track negative? Do officers not have trust in the AF to make positive change or manage new programs? Finally, what does a high quality of life mean to AMC aviators? While most people strive for a good quality of life, what similarities can be made so that they may be emphasized by senior leaders?

Conclusion

In conclusion, AMC has a daunting retention problem moving forward. The thirst for air mobility seems to be unquenchable. Therefore, a reduction in operations tempo is not likely. With that realization, the AF must move forward with new ideas to provide career autonomy for its pilots, demonstrated by the OG/CC's ratings of No Autonomy. Additionally, the AF needs to budget for increased support personnel to help take the workload off of AMC aircrews. The increased assistance would be immediately be felt by pilots, especially during an amplified operations period. Finally, if possible AMC needs to work with the CSAF to implement similar programs the AF utilized during the last retention panic, decrease operations tempo and enhance quality of life.

Appendix A. Round One Questionnaire

Round 1 of 3

AMC Retention: A Delphi Study

You have been asked to participate in this survey due to your aviation experience in AMC. The point of this research is to inform AMC and HAF leadership what AMC pilot retention looks like in the coming decade and whether a “fly only” track will help with retention.

The reason for this research is that for the first time in a while AF leadership is looking at a “fly only” track. The researcher recently attended a CSAF directed AFSO 21 event on CAF pilot retention and whether the AF should institute a CAF “fly only” track. To add to that conference, the researcher is examining the same topics but in the MAF.

All responses will be logged anonymously and participation is voluntary. Please return this questionnaire to Ryan.Thornton.1@us.af.mil.

Questions:

- 1) If the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years? Describe as many plausible scenarios as possible.
- 2) What changes do you think the AF should make in the next 10 years to influence AMC pilot retention?
- 3) In your opinion, what are the main reasons millennial pilots, pilots currently nearing the end of their UPT commitment, may decide to leave active duty?
- 4) If the AF were to develop and implement a dual career track (“flying only”), how do you think this would impact AMC pilot retention?

- 5) If you were designing a dual career track (flying only), what would it look like?
- 6) What secondary effects would a dual career track have on the AF in general?

Appendix B. Round Two Questionnaire

Round 2 of 3

AMC Retention: A Delphi Study

You have been asked to participate in this survey due to your aviation experience in AMC. The point of this research is to inform AMC and HAF leadership what AMC pilot retention looks like in the coming decade and whether a “fly only” track will help with retention.

The reason for this research is that for the first time in a while AF leadership is looking at a “fly only” track. The researcher recently attended a CSAF directed AFSO 21 event on CAF pilot retention and whether the AF should institute a CAF “fly only” track. To add to that conference, the researcher is examining the same topics but in the MAF.

All responses will be logged anonymously and participation is voluntary. Please return this questionnaire to Ryan.Thornton.1@us.af.mil.

Questions:

Please use the below Likert scales to rate the *likelihood* of the response being implemented by the AF and the *impact* of the response if implemented. Please note the difference between the scales, the likelihood range is from 1 to 7 and impact scale is only 1 to 5. Post your rating ratings after each prediction.

Likelihood
1 = Highly unlikely to occur
3 = Somewhat unlikely to occur
5 = Somewhat likely to occur
7 = Highly likely to occur

Impact
1 = Little to no impact
3 = Somewhat impactful
5 = Highly impactful

1) If the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years?

Ops tempo remains high, but no major force-on-force wars. If the economic opportunities for pilots in the private sector continue to improve, 10 years from now will be an extreme low point for pilot retention. AMC will be struggling to retain senior pilots (greater than 10 years of flying experience) while struggling to determine how to keep the first generation of pilots to enter under the new retirement system to stay in past their initial commitment. AMC will retain two types of pilots, 1) individuals who have been identified as high performing officers, and who would likely stay in regardless of any retention policies and 2) individuals who are too scared or too lazy to enter the private sector. In my opinion, they will fail to retain individuals who are ambitious, imaginative and capable, and instead of forming the core group of mid-level leaders, these individuals will be in the private sector. **Likelihood __ / Impact __**

Ops tempo comes down significantly and economic opportunities for pilots in the private sector do not improve. AMC will struggle with having too many experienced pilots (greater than 10 years of flying experience) while still struggling to determine how to keep the first generation of pilots to enter under the new retirement system to stay in past their initial commitment. Judging from how the AF has handled previous personnel moves, I think they will take the immediate benefits of reducing experienced pilots. This move will save money initially, but the generations under the new retirement system will see this as the AF/AMC not caring about them, and they will leave in large numbers at the first opportunity. **Likelihood __ / Impact __**

Abysmal. The Guard/Reserve will lose people to airlines, the guard/reserve will absorb all the AD pilots who want a more stable lifestyle and are tired of deploying. The opportunities in the airlines are very appealing for people who are tired and disenfranchised with senior leadership, backtracked promises, and non-transparency. Generally, the IPs will be the ones to leave, so the force will have a hard time training the next generation and meeting high frequency of challenging mission sets.

Likelihood __ / Impact __

Overproduce MAF pilots to fill USAF needs. **Likelihood __ / Impact __**

Lesser quality of line instructor pilots teaching new pilots makes a lower overall quality and increases the possibility for mishaps or violations. Less pilots will be available for staff which will lead to less educated inputs to AFIs, TTPs and overall policy. **Likelihood __ / Impact __**

We receive terrorist attacks on US soil, retention dissolves as patriotism soars.

Likelihood __ / Impact __

Pilot shortage is declared, stop loss initiated. Pilot retention bonuses and commitment years increase. **Likelihood __ / Impact __**

Pilot shortages hit civil and military aviation forcing civil aviation to make great strides in automation (minimally manned cockpit), requirement for international airline pilots shrinks. Demand for pilots with UAV and IT-related experience soars.

Likelihood __ / Impact __

Continued federal budget issues could further shrink the size of the AF. With a continuation of current U.S. policy on use of the military around the world this will result in continued or increased stress on the pilot force. **Likelihood __ / Impact __**

2) What changes do you think the AF should make in the next 10 years to influence AMC pilot retention?

Increase pay to that comparable of major airlines at key points in the career of a pilot in order to influence retention. **Likelihood __ / Impact __**

Make service for dual military couples more manageable.

Likelihood __ / Impact __

Create separate tracks for career pilots and those more interested in leadership opportunities. **Likelihood __ / Impact __**

Creating a new system where AMC pilots can leave full time active duty to fly for the airlines and establish seniority, then return on a regular basis for several years. For example: Ten year AF captain leaves to fly for Delta for 2 years, then returns to the Air Force for 3-4 years. **Likelihood __ / Impact __**

Build manning programs to deliberately produce pilots at a rate to fill long term exit ramp programs such as: pilot training instructors, FTU instructors, broadening programs, crossflow, officer development, staff officer billets, and create pilots for the line with 10-15 years of experience. **Likelihood __ / Impact __**

Allow much more horizontal entry to active duty from AFRC/ANG.

Likelihood __ / Impact __

The Air Force must refocus on the squadron as the basic organization structure. The Air Force has stripped the squadrons of personnel to execute mission support functions. This is not limited to operational flying squadrons. Squadrons are required to perform functions well outside their functional expertise. Squadrons are not designed to

support staff work (AF Inspection System, personnel functions, finance, etc...).

Likelihood __ / Impact __

The AF should look at requiring fewer moves for pilots and allowing pilots a greater say as to where they want to live and what career track they want to be on. For example, in the airlines a pilot can choose to remain a co-pilot, request different aircraft, request a move to a more desired location and those changes are based on seniority. The airlines realize that their pilots are an asset and they treat them as such. They give a choice to their pilots and they make them feel like they are a part of the company. A lot of AF pilots feel as though they not valued. **Likelihood __ / Impact __**

Any reduction in ops-tempo that they could make would be a game changer.

Likelihood __ / Impact __

Remove the 2-below Promotion system. This promotion system identifies future leaders way too early, and instead of providing a positive incentive, it provides a negative incentive to those not selected. **Likelihood __ / Impact __**

3) In your opinion, what are the main reasons millennial pilots, pilots currently nearing the end of their UPT commitment, may decide to leave active duty?

Lifestyle: too many PCS's, deployments, time away from family.

Likelihood __ / Impact __

Other outside career opportunities (airline and civil industry).

Likelihood __ / Impact __

Little desire to remain once made aware that they are not competitive for leadership positions, higher rank, or have no desire to command.

Likelihood __ / Impact __

Lack of faith in AF policy decisions and expansion of mission requirements outside of the Air Force's core missions. **Likelihood __ / Impact __**

Millennials may get out if they feel their development, as they understand it, is being stifled by a restrictive personnel system. They want to be free to move between jobs when it suits them. **Likelihood __ / Impact __**

Spouse no longer wants to be a part of the military. **Likelihood __ / Impact __**

They feel they are not being challenged. **Likelihood __ / Impact __**

Loss of faith and trust in Commanders, people who should not be promoted and getting command are getting those opportunities instead of others who should. This disenfranchises them and only upsets them and enforces the idea of lack of trust and faith in the system. **Likelihood __ / Impact __**

Military compensation has not kept pace with the private sector.

Likelihood __ / Impact __

Female pilots may choose to leave the military or go to the AFRC so they can focus on starting a family. **Likelihood __ / Impact __**

4) If the AF were to develop and implement a dual career track (flying only), how do you think this would impact AMC pilot retention?

I think retention would increase slightly but this solution doesn't hit one of the root causes to this problem...Quality of family life and deployments.

Likelihood __ / Impact __

Mixed. I think that if it were done correctly, you could succeed in retaining some great IPs, but most likely, since the AF struggles with personnel management, I doubt it could be properly executed. **Likelihood __ / Impact __**

I believe this would be a very attractive option for those that wish to continue their experience as a seasoned flyer. This would also be an attractive option for units wishing to maintain experience and continuity in flying ability and instruction within their organizations. **Likelihood __ / Impact __**

Good at first (5-10 yrs) then regress back to the norm. Reality is a career pilot may only make Major which isn't enough money or influence to keep officers in the USAF. **Likelihood __ / Impact __**

I don't think that the up and out process is the problem, therefore I don't think it would affect pilot retention. **Likelihood __ / Impact __**

It would increase retention and our warfighting capability.
Likelihood __ / Impact __

5) If you were designing a dual career track (flying only), what would it look like?

The AFRC model, but there is little room in active duty with current force structure limitations for this change. The AD unfortunately is saddled with the burden of not only grooming the continuous pool of future commanders, but also cutting the chaff for those that will not make an AD career due to the desire of being only a flyer vice an Officer first. **Likelihood __ / Impact __**

No "boxes to check" (PME, masters, wg jobs etc), focus on flying not leadership, top out at Lt Col. **Likelihood __ / Impact __**

I would probably look at 2 or 3 individuals for each squadron and 1 or 2 for each group. Next, they would all be evaluators at the Sq and Gp levels, since this group would be the most experienced. They would be expected to teach classes during the week, perform evaluations and training flights. Also, at the current ops tempo, one would be

deployed from each squadron at a time. I would also imagine that this group would be determined after the initial pilot training commitment by a Central Selection Board. I would have them evaluated once a year based on their flying, instruction and evaluation technique. There would need to be a clear avenue for commanders to remove these individuals from the career pilot track to prevent these positions from being abused.

Likelihood __ / Impact __

Setting up a functional to manage these positions would most likely be necessary. Perhaps a different OPR would also be necessary with the potential for bonuses instead of promotions. **Likelihood __ / Impact __**

I would make it highly competitive and selective. I would build in more than one rank associated with the program and promotion would be against members in the program only. This would allow for competitive promotion opportunities and competitive increases in pay, with the possibility of a pay for performance system (flying hour bonuses, etc.) I would also build in Base of Preference (BOP) and multi-year homestead options that get approved by the squadron commander. I would also try to build in a certain level of prestige in the program by focusing the people selected for the program into specific jobs in the squadron (ie. Chief Pilot, Chief of Stan/Eval, or Chief of Tactics).

Likelihood __ / Impact __

I were to design one, the bottom-line is you would have to figure out how to develop the best Airmen for both. Performance would still be the standard and you could not default to a flying club approach. The Air Force is not going to create an “airline” track, we do not have the infrastructure to allow pilots to work airline type hours/processes. The standards would be the same for both career paths and the work

load would be the same. The only difference is we would allow pilots to stay in for longer without possibly promotion or PCS based solely on their ability to fly and the process around operations. This could provide a level of stability and may offer some retention benefits. **Likelihood __ / Impact __**

Same until mid-level captain, then split to a leadership (up or out) or career pilot track. Use SEI to identify which is which. Career pilot quantity still needs to be competitive, but not up or out. Career pilot should allow horizontal movement between AFRC/ANG and top out at Lt Col or Maj. Might be best to create a separate rank altogether, like warrant officers. **Likelihood __ / Impact __**

1 to 2 billets in each operational flying squadron and an additional 5-10 in each training squadron for majors to fly. They still have to get out at the mandatory 35 years of service. **Likelihood __ / Impact __**

6) What secondary effects would a dual career track have on the AF in general?

Too many non-promotable FGOs who want to do nothing but fly, leaving all the additional duties squadrons have been straddled with to be completed by junior aviators that are more in need of development and experience. **Likelihood __ / Impact __**

Lack of career broadening to pilots closest to the next generation and mission may lead to bad cultures growing within squadrons. Having a corps of pilots that only show up to fly and mission plan may skew normal expectations for others. As inviting as it sounds, flying only can take away from unification in a squadron. There will be an “us and them” mentality. **Likelihood __ / Impact __**

Create a sub-class that was vehemently anti-military (unprofessional) and unruly, making the leading of such individuals difficult because the “stick” options are very

limited as well as remaining “carrot” options. Think Retired On Active Duty.

Likelihood __ / Impact __

The worry would be it could undermine leadership, but I don’t think it would.

This fear stems from the unknown process surrounding a dual career track.

Likelihood __ / Impact __

Developing senior leaders. While the percentage of officers who will become senior leaders (O-6 and above) is extremely low, the entry pool needs to be of a certain size to account for normal attrition to ensure a pool of candidates is available at each level of leadership and command. **Likelihood __ / Impact __**

It would help shift our focus from a management training focus for all officers, to pride in aviation and warfighting prowess. **Likelihood __ / Impact __**

First, these would have to be additional bodies, as we only have enough billets to maintain the current force structure (in the up and out mentality). It would drive an increase in topline and budget. Rated manning would have to increase, therefore there would be more flying hours required, more WSS (weapons system sustainment), more depot time... essentially with more pilots in the AF there would also have to be more maintainers etc... **Likelihood __ / Impact __**

Appendix C. Average Answer Change, Round 2 versus Round 3

Question 1

		Likelihood		Impact
High Tempo		-0.3125		-0.35
AF Shrinks		0.0125		0.2375
Abysmal		-0.4875		-0.2
Weaker IPs		0.075		0.025
Stop Loss		-0.325		0
Overproduce Pilots		0.6375		0.05
US Attacked		-0.575		-0.0125
Pilot Shortage		0.125		-0.1
Decreased Tempo		-0.4625		-0.1375

Question 2

		Likelihood		Impact
AFRC/ANG to AD		-0.075		0.0875
Refocus On Sq		-0.1625		0.0875
Dual Service Easier		-0.1625		0.1875
Increase Pilot Production		0.1375		-0.125
Career Pilot		0.125		0
Remove 2-Below		-0.1375		-0.125
Fewer PCS's		-0.125		-0.05
Reduce Ops Tempo		0.2		-0.1625
Increase Pay		-0.2		-0.05
AF/Airline Exchange		-0.125		-0.0625

Question 3

		Likelihood		Impact
Other Opportunities		0.1		-0.2875
Females Starting Family		0.2		-0.175
Lifestyle		-0.0625		-0.1875
Family Finished w/AF		-0.5		-0.3
No Faith in CC's		-0.2		-0.1125
Career Stalled		0.3625		0.1125
No Faith In AF		0.075		0.1
Low Pay		-0.525		-0.2375
No Autonomy		0.0375		-0.1875
Job Not Challenging		0.3375		0.125

Question 4

		Likelihood		Impact
Bad In Long Run		0.1875		0.025
AF Will Mismanage		0.1		-0.2625
Increase Slightly		0.1125		0.0125
Beneficial		-0.0125		0.2875
Increase Warfighting Capes		-0.025		-0.2375
Negligible		0.05		-0.0375

Question 5

		Likelihood		Impact
2 Tracks After Capt		-0.15		0.05
Same Career Standards		0.225		-0.25
2 Sq/2 OG Spots		0.3375		-0.225
Highly Competitive		0.2375		-0.35
ARC Model		0.25		-0.25
2 Sq/10 FTU Spots		0.05		0.3375
Functional Mgr		0.3625		-0.125
0 Boxes To Check		-0.125		-0.1375

Question 6

		Likelihood		Impact
No Career Broadening		0.025		-0.025
Increased Workload		0.1125		-0.125
Retired On AD		0.7125		-0.125
Shrink Leadership Pool		-0.1625		-0.55
Pride In Aviation		0.4125		0.4125
Undermine Leadership		-0.2125		-0.2625
Budget Increase		-0.0625		-0.2875



AMC Pilot Retention: A Delphi Study



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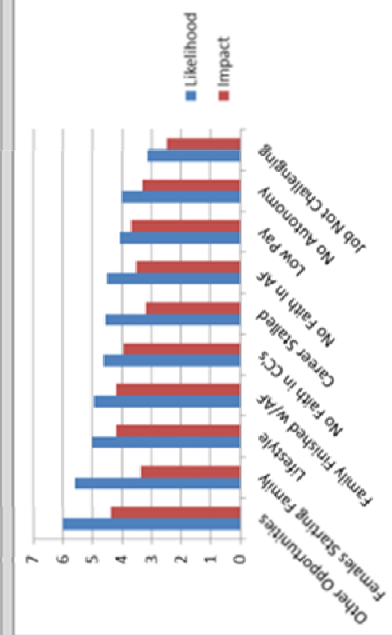
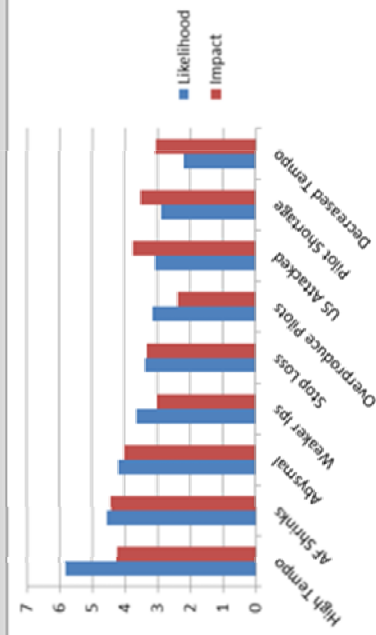
Abstract

This research studied AMC pilot retention in the forthcoming decade and what influences millennial pilots to stay or leave active duty. Furthermore, this study asked if a dual track (fly only career path) would help with retention in AMC. A Delphi Study consisting of 16 AMC aviation experts was utilized to answer the research questions. The expert panel was comprised of officer ranks spanning from Major to Colonel and included instructor pilots, flying squadron commanders, and operations group commanders.

This analysis determined that AMC will have a difficult time with pilot retention in the next ten years. Additionally, the high operations tempo coupled with outside employment opportunities are the main causal factors influencing pilots to leave active duty. While career autonomy is proven to positively affect retention, a dual track option is not believed to have a significant impact on AMC pilot retention. Finally, the panel concluded that the AF was not likely to employ any of the panel's responses on how to bolster AMC retention.

Research Question

If the AF continues with its current policies, what will AMC pilot retention look like over the next 10 years?



Methodology

A three round Delphi survey was utilized to gain insights from MAF aviators. The voluntary panel was consisted of 16 officers in the ranks of Maj - Col and had served as IP, Sg, SgCC's or OGCC's.

The Round One survey collected narrative responses which were analysed and presented for quantitative rating in Round Two.

Round Three presented score averages from Round Two and asked the pilots if they wished to change their ratings based on the average scores from the panel. Scoring for Round Two and Three were based on a 7 point Likert Scale for likelihood and a 5 point scale for impact.

Implications

This research indicates that the operations tempo will remain high and pilot retention will be a challenge.

Recommendations

1. Reduce Operations Tempo
2. Increase Support Personnel
3. Enhance Quality of Life
4. Bolster Career Autonomy

Collaboration

HQ AF / A3OM, Col Chris Colbert - Advisor

Acronyms

AD – Active Duty

ACSC – Air Command and Staff College

ADP – Airman Development Plan

AF – Air Force

AFI – Air Force Instruction

AFIT – Air Force Institute of Technology

AFPC – Air Force Personnel Center

AFRC – Air Force Reserve Command

AFSO – Air Force Smart Operations

AMC – Air Mobility Command

ANG – Air National Guard

ARP – Aviation Retention Pay

BDE – Basic Developmental Education

BOP – Base Of Preference

BTZ – Below The Zone

CAF – Combat Air Forces

CSAF – Chief of Staff of the Air Force

DoD – Department of Defense

FAA – Federal Aviation Administration

FGO – Field Grade Officer

FM – Force Management

FTU – Formal Training Unit

FY – Fiscal Year

HAF – Headquarters Air Force

IDE – Intermediate Developmental Education

IP – Instructor Pilot

IT – Information Technology

MAF – Mobility Air Forces

MWS – Major Weapon System

PAFSC – Primary Air Force Specialty Code

PCS – Permanent Change of Station

PME – Professional Military Education

RAND – Research And Development

SDT – Self-Determination Theory

SOS – Squadron Officer School

TTP – Tactics Techniques and Procedures

UAV – Unmanned Aerial Vehicle

UPT – Undergraduate Pilot Training

USAF – United States Air Force

USAFA – United States Air Force Academy

WSS – Weapon System Sustainment

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